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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,077	02/17/2004	Edward J. Fabian	03-379	1830
34704	7590	08/08/2006	EXAMINER	
BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510			HOLZEN, STEPHEN A	
			ART UNIT	PAPER NUMBER
			3644	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/781,077	<b>Applicant(s)</b> FABIAN ET AL.	
	<b>Examiner</b> Stephen A. Holzen	<b>Art Unit</b> 3644	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-32 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-10, 12-16, 18, 20-22, 29-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 23-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/19/2006.
2. Claims 2-10, 12-16, 18, 20-32 are pending
3. Claims 23-28 are withdrawn
4. Claims 2-10, 12-16, 18, 20-22, 29-32

### ***Response to Arguments***

5. Applicant's arguments (see Applicant's Arguments to the Non-Final Rejection, filed 2/2/2006) with respect to the rejection(s) of the claim(s) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.
6. Applicant has argued that the rejection of claim 2 is fatally flawed because none of the references used to reject it teaches a helicopter, as claimed. The examiner agrees with this assertion and regrets the delay in prosecution. It should be remembered however that the preamble does not generally hold patentable weight. (Not until Claim 7, does the preamble breath life into the claims.)

7. The examiner agrees that Tsotsis does not teach using 350 degree curing epoxy structural film adhesive to bond each ply to the first and second surfaces of the core.

This rejection is withdrawn.

8. Applicant should note that the examiner has reconsidered the teachings of Cundiff..

9. The applicant has amended the word "prepreg" to "prepeg". The examiner believes that "prepreg" is the proper abbreviation to preimpregnated. A correction and/or explanation is required.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-6, 14, 15, 18, 20-22, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff (6,156,146) in view of CMT Materials and further in view of Watkins (2005/0095380) and further in view of 3M Corporation (Structural Core Splice Adhesive Film AF 3028) and further yet in view of Kay. (4,687,691).

Re – Claims 2-4, 6, 14, 15, 18, 20, 22, 29-32: Cundiff teaches:

- A core (12) formed from an open celled and thermally insulating material (Nomex or Fiberglass, see Col. 7, lines 60-065).

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- The core is filled with a syntactic foam (see Col. 8, line 11 "SynSpand X9899"). Applicant should appreciate that SynSpand X9899CF is an expanding syntactic film made by the Henkel Corporation. As evidence of this assertion the examiner refers applicant to the attached "Henkel" reference, which discloses, "SynSpand X9899CF is a medium density low exotherm expanding syntactic film suitable for core filling application. The low exotherm chemistry makes this product ideal for deep core fill."
- The core has a first and second surface (see Figure 5).
- At least one ply of structural graphite prepreg material (16) bonded to each of said first and second sides wherein each ply is bonded by an adhesive film (14a, 14b).
- The primary requirement is that the cure temperature of the prepreg material should be the same as the cure temperature of the adhesive film. (See Col. 7, lines 62 – Col. 8, 1-9)

Cundiff does not teach:

- That the syntactic material is made from a fiberglass material.
- That the adhesive film is a 350° F curing epoxy structural film adhesive
- The Use of the composite on a helicopter.

Regarding Fiberglass Material Limitation

- CMT Materials, Inc. has been supplying syntactic and solid polymer material for plug assist thermoforming since at least November 25, 2002.<sup>1</sup> Syntactic Foams are known composite material synthesized by filing a metal, polymer or ceramic material with hollow particle called micro balloons. The presence of hollow particles results in lower density, higher strength, a lower thermal expanding coefficient.<sup>2</sup> (It should be understood that the examiner is not highly skilled in composite materials and therefore must rely upon the teachings from Wikipedia.org to determine what all Syntactic Foams are comprised. The examiner understands that the date of the Wikipedia.org evidence disqualifies it as prior art and therefore the examiner has cited CMT Materials, Inc. as evidence that the information contained in Wikipedia.org was known prior to the date of invention by applicant.)
- Syntactic foams can be modified by the addition of large diameter fiberglass or fiber-reinforced macrospheres.<sup>3</sup> The examiner cites Watkins et al as

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<sup>1</sup> [http://web.archive.org/web/\\*/http://www.cmtmaterials.com/](http://web.archive.org/web/*/http://www.cmtmaterials.com/)

<sup>2</sup> "Syntactic foam." Wikipedia, The Free Encyclopedia. 24 Jun 2006, 15:04 UTC. Wikimedia Foundation, Inc. 1 Aug 2006  
<[http://en.wikipedia.org/w/index.php?title=Syntactic\\_foam&oldid=60342711](http://en.wikipedia.org/w/index.php?title=Syntactic_foam&oldid=60342711)>.

<sup>3</sup> "Syntactic foam." Wikipedia, The Free Encyclopedia. 24 Jun 2006, 15:04 UTC. Wikimedia Foundation, Inc. 1 Aug 2006  
<[http://en.wikipedia.org/w/index.php?title=Syntactic\\_foam&oldid=60342711](http://en.wikipedia.org/w/index.php?title=Syntactic_foam&oldid=60342711)>.

evidence that fiberglass macrospheres were a known type of syntactic foam component prior to the date of invention. (By at least May 16, 2003).

- Since Cundiff teaches using Syntactic foam to fill the honeycomb structure, and syntactic foams are known to be made from a fiberglass material (macrospheres) it would have been obvious to one having ordinary skill in the art to make the syntactic material from a fiberglass material, as taught by CMT Materials and Watkins et al, for the purpose of increasing thermal insulation properties. Furthermore it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose to make the syntactic material from a fiberglass material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.
- It should be noted that Fiberglass macrosphere balls are capable of retarding fire.

#### 350° F curing epoxy structural film adhesive

- This type of film is well known in the art. See for example "3M Scotch-Weld Structural Core Splice Adhesive Film AF 3028". (The date of this publication is June 2002, as evidenced on the bottom right hand side of page 9). It would have been obvious to one having ordinary skill in the art, at the time the invention was made to choose to make the syntactic material from a

fiberglass material for the purpose of filling mismatched areas and for further reinforcing the honeycomb core. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose to make the syntactic material from a fiberglass material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

#### The Use of the composite on a helicopter

- Kay teaches that it is well known to manufacture aircraft (helicopters and airplanes) from composites materials (see Col. 5, lines 44-53). It should be appreciated that an aircraft is "A machine or device, such as an airplane, helicopter, glider, or dirigible, that is capable of atmospheric flight."<sup>4</sup> It would have been obvious to one having ordinary skill in the art to make aircraft components (helicopter components) from the composite materials defined by Cundiff and modified as done above, for the purpose of increasing passenger safety. Kay teaches that the top and bottom surfaces of the composite material can be used as exterior and interior surfaces of the craft. The examiner asserts that Kay teaches this concept since it is clear that at least a portion of one of the top or bottom surfaces forms the exterior surface of the helicopter structure (such as for instance the exterior of the fuselage). The

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<sup>4</sup> <http://www.answers.com/aircraft&r=67>



opposite side (the upper side) would therefore be “interiorly” disposed relative to the exterior surface. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

- Re – Claim 5: Cundiff teaches that the plies are made from a graphite cloth a cured perform impregnated via the RTM method. (See Col. 1, lines 48-51; Col. 3, lines 50-53; see Col. 7, lines 62 – Col. 8, 1-9)
- Re – Claim 21: Kay teaches that aircraft and helicopter doors and fuselages can be made from composite materials.

12. Claims 7-10, 12, and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff as applied to claim 6 above, and further in view of ordinary skill in the art.

Initially, it should be noted that the examiner takes OFFICIAL NOTICE that

outer skin panel of a cockpit section,  
upper cabin door in a cabin section,  
a lower cabin door in a cabin section,  
steps (see Ambrose et al 6,189,833),  
an emergency egress hat in the cabin section,  
upper door in a transition section

are all well known helicopter sections.

The examiner does not believe it necessary to provide a reference for each of these different embodiments. Applicant has not invented a helicopter platform. The core invention is drawn to the material and not the location of the materials. Therefore the examiner takes OFFICIAL NOTICE that the above reference helicopter sections are well known in the art. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

Alternatively, it is clear from Kay that composite materials can be used in a plurality of different locations on/within an aircraft (helicopter or airplane). The examiner asserts that the claimed location of the composite material do not define over the prior art because simply locating a known material in different parts of the aircraft would require only routine skill in the art. It would have been obvious to one having ordinary skill in the art, at the time the invention was made to manufacture the plurality of helicopter components from the claimed composite for the purpose of increasing pilot and crew safety.

Finally, it has been held that rearranging the parts of an invention involves only routine skill in the art. In re Japikse 86 USPQ 70. The location of the parts is an obvious design choice.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cundiff as applied to claim 6 above, and further in view of ordinary skill in the art. Cundiff does not teach a plurality of plies of structural graphite prepreg bonded to each of said first and second surface by an epoxy structural film adhesive. Cundiff only teaches a single ply of structural graphite prepreg bonded to each of the first and second surface by an epoxy structural film adhesive. The examiner asserts then that it would have been obvious to make the composite from a plurality of plies of structural graphite prepreg bonded to each of said first and second surface by an epoxy structural film adhesive since has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.* 193 USPQ 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Stephen A. Holgren  
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7/31/06